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THE OFFICE OF MYCOLOGY AND DISEASE SURVEY

Volume XI Number 6

July 15, 1927

BUREAU OF
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UNITED STATES DEPARTMENT OF AGRICULTURE

THE PLANT DISEASE REPORTER

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THE OFFICE OF MYCOLOGY AND DISEASE SURVEY

Volume XI July 15, 1927 Number 6

STINKING SMUT OF WHEAT

More reports on the prevalence of the stinking smuts Tilletia laevis and T. tritici are especially desired. With extensive seed treatment campaigns in progress it is essential to obtain reliable data on the occurrence of the disease and the damage that it is causing.

Illinois: Stinking smut and leaf rust are unusually abundant in the vicinity of Urbana this year. One farmer who had never noticed stinking smut in his wheat during the last ten years has 8 per cent of this smut the present season. This is in Turkey wheat, the same that he has grown on his farm all these years. (B. Koehler, July 5)

Iowa: Although bunt was common and destructive last year, this season it has been possible to find only a single field in Harrison County and in this there was only 2 to 3 per cent infection. (Archer, July 15)

Colorado: On our recent check up on bunt we found very little smut in the fall wheat. This was especially true where the wheat had been treated and also early plantings. However, there were some exceptions where copper carbonate had been used on late planted smutted soil. We found as much as 35 per cent smut in this case. Taking eastern Colorado as a whole the amount of bunt will be less than last year. (E. A. Lungren, June 30)

MORE REPORTS ON LEAF RUST OF WHEAT (PUCCINIA TRITICINA)

Illinois: Unusually abundant in the vicinity of Urbana this year. (B. Koehler, July 5)

Extremely abundant this year. Fields just heading were observed two weeks ago in which every leaf was completely covered with sori. (H. W. Anderson, June 20)

Iowa: Infection is extremely heavy over the state. Fields commonly have 80 per cent leaf infection. In the northwestern corner some fields are so heavily infected (100 per cent) that plants are stunted to half the normal size. (Archer, July 15)

Colorado: General throughout the dry and irrigated sections of state, but causing little damage. More present than stem rust. (E. L. LeClerg, July 1)

Montana: Just beginning to appear in the plots. (P. A. Young, July 1)

TAKE-ALL OF WHEAT COLLECTED IN EASTERN MARYLAND

"On June 21 while inspecting wheat fields for bunt in Queen Annes County, Maryland, in company with Dr. R. A. Jehle, a take-all spot was found in a 20-acre field of bearded wheat at Wye Mills. The spot was from 15-20 feet in diameter and all plants within it were dead. Affected plants showed the typical blackening of the base of the culm with the waxy mycelial plate. A microscopic examination showed mature or nearly mature perithecia of Ophiobolus graminis Sacc. in great abundance. Specimens are on file in the Mycological herbarium.

"This seems to be the second report of this fungus accompanied by specimens from Maryland. In 1920, A. G. McCall of the Maryland Experiment Station collected the disease in the neighboring county of Kent and it was later identified by H. B. Humphrey as take-all. C. E. Temple has reported that in his opinion a considerable proportion of the root rot trouble reported in Maryland is due to Ophiobolus.

"The above case was the only one found in 62 fields examined in 5 Eastern Shore counties. It is evident, therefore, that the disease is not very destructive in that part of the state this year." (Haskell, July 7)

OPHIOBOLUS ON WHEAT AND BARLEY AS REPORTED FROM CALIFORNIA

"Foot rot (Ophiobolus graminis) is again prevalent over most of the state but apparently is causing less damage than for the past few years. On the University Farm at Davis, it has been noted that both early and late sown varieties of barley and wheat are rather badly attacked. There appears to be considerable varietal resistance to foot rot in both wheats and barleys. For instance, White Australian shows but little attack of foot rot, while Hard Federation shows a great deal. In the barleys, Sacramento practically is free from this attack, while Atlas and Vaughan are very badly attacked." (Mackie, Cereal Courier 19: 161. June 10)

REPORTS ON OTHER WHEAT DISEASES

Stripe rust (Puccinia glumarum)

Montana: One plot of Jones Fife wheat on the Experiment Station shows traces to 5 per cent stripe rust (Puccinia glumarum). Traces occurred in an adjacent plot of Super Fife wheat. This rust is just appearing. (P. A. Young, July 1)

Nematode (Tylenchus tritici)

Virginia: Two collections have been received this year, one from Prince William County and one from King and Queen. Slight to moderate infection. (Fromme, July 1)

Scab (Gibberella saubinetii)

Iowa: In a few scattered fields over the state it is possible to find an occasional plant with a portion of the head affected. (Archer, July 15)

Black chaff (Bacterium translucens undulosum)

Iowa: Only one field found and in this only an occasional head was infected. (Archer, July 15)

Leaf spot (Septoria graminum)

Montana: Abundant in one plot of Montana 36 wheat. (P. A. Young, July 1)

Sterile leaf spot

Montana: Three plots of Black Hull and one plot of Super Hard (closely related to Black Hull) wheat are suffering badly from a heavy infestation of a sterile leaf spot. I hope to determine the cause of this trouble, for it has been rather serious for some years. Mr. W. L. Popham, State Leader in Barberry Eradication, has just returned from a trip into the western part of the state. He reports this sterile leaf spot to be present in many fields. It is interesting to note that in the Experiment Station plots of the Agronomy Department here this leaf spot occurs only in the four plots mentioned above and was absent from a plot of Kanred wheat. (P. A. Young, July 1)

BARLEY DISEASES IN IOWA

The following notes were submitted by W. A. Archer of the Plant Disease Survey under date of July 15:

Stripe (Helminthosporium graminoum)

"Most fields over the state have some infection but mostly very slight and with only lower leaves affected. The damage can be estimated as a trace."

Loose and covered smuts (Ustilago nuda and U. hordei)

"In general the infection is a trace but in some counties many fields show 10 to 25 per cent infection."

Spot blotch (Helminthosporium sativum)

"This disease is appearing in only a few places and then the infection is slight. The crop will mature before the fungus can develop to any extent."

Leaf rust (Puccinia anomala)

"Infection unusually scarce over state."

NOTES ON CROWN RUST OF OATS (PUCCINIA CORONATA)

Virginia: Reported very severe and cause of almost total failure of crop in Surry County. Also present at Blacksburg. Moderately severe. (Fromme, July 1)

Iowa: In many fields in the south there is a moderate to heavy infection but the majority show only slight infection. In the northern half of the state most of the fields show a more uniform infection, running about 10 to 25 per cent with heavy flecking of leaves, a condition which has developed during the past two weeks. It is quite likely that the only thing which has prevented a crown rust epidemic is the lack of rain. (Archer, July 15)

BACTERIAL WILT OF SWEET CORN (APLANOBACTER STEWARTII)

Specimens of this disease were received by the Office of Cereal Crops and Diseases July 7 from Welch, West Virginia, with the information that all the plants in a garden were affected. The variety was said to be Stay Green.

ALFALFA DISEASES

Root rot (Bacterium insidiosum)

Colorado: Many reports have been received regarding this disease. Causing a great deal of damage in the irrigated sections. Has not been reported or observed in dryland sections to date. (E. L. LeClerg)

Mosaic (undet.)

Montana: A light infestation of mosaic occurs in a plot of Turkestan alfalfa. (P. A. Young, July 1)

Leaf spot (Pseudopeziza medicaginis)

Illinois: Very abundant and unusually destructive due to the fact that wet weather prevented the farmers from cutting the first crop. (H. W. Anderson, June 20)

New Mexico: Appearing earlier than usual. Damage slight as yet. (Crawford, July 1)

Bacterial blight (Bacterium medicaginis)

Utah: Has been prevalent in first-crop alfalfa this year. It was observed in all the fields examined, generally occurring on a high percentage of stems. In one of the higher valleys this disease caused losses in individual fields running as high as 40 per cent of the first crop, this loss resulting from both reduction in the number of stems and the destruction of the lower leaves on the stems which did develop. (Linford, July 2)

Yellow leaf blotch (Pyrenopeziza medicaginis)

Utah: This disease occurred widely but very sparingly in first-crop alfalfa this year. The most severe development observed resulted in 5 per cent defoliation; the second most severe in 2 per cent defoliation. Both of these fields were dry-farm alfalfa. (Linford, July 2)

Ascochyta leaf spot (Ascochyta imperfecta)

Utah: This disease has been observed in several fields in different localities but it has not been seen to cause important injury. (Linford, July 2)

Dodder (Cuscuta sp.)

New Mexico: Unusually severe in San Juan and San Miguel Counties. (Crawford, July 1)

Crown rot (due to winter injury)

Iowa: Older fields in northwestern part of the state show one-third to two-thirds reduction in stand. One and two-year fields, while not showing loss, do reveal discolored areas at tops of crowns. (Archer, June 20)

REPORTS ON DOWNY MILDEW OF ALFALFA (PERONOSPORA TRIFOLIORUM)

Massachusetts: Observed in field at Amherst. This alfalfa was planted last summer. Downy mildew was present last fall also. (W. Doran, May 20)

Virginia: Of local occurrence. The writer has not observed this disease here before. Upper leaves badly yellowed. Worst in best parts of the field. Infected plants only a few months old. (McWhorter, June 1)

Iowa: A single one-year old field observed in northwestern part of state with 1 per cent of plants infected. (Archer, June 16)

Colorado: About the same as last year. Not important, just present at early season. (E. L. LeClerg, July 1)

Montana: Alfalfa downy mildew is unusually abundant this spring, and is doing a little damage in two alfalfa plots, but not in the others. (P. A. Young, July 1)

Utah: Traces were to be seen in nearly all fields of first-crop alfalfa and in some fields it caused some injury, amounting to as much as 15 per cent of the crop in one instance. Losses estimated at 2 to 5 per cent of the first cutting were observed frequently. (Linford, July 2)

DUSTING WITH SULFUR CONTROLS POWDERY MILDEW OF RED CLOVER IN TRIAL IN NORTH CAROLINA

The following note is taken from the North Carolina State College of Agriculture Extension Farm News Vol. 12, June 1927:

"Powdery mildew on red clover may be successfully controlled according to results secured in a simple test made this spring. On April 23, the clover was about twelve inches high, and mildew was just beginning to appear. At this time very finely ground sulfur was applied to a small plot in the field, by means of a small dust gun, such as is used for gardens. The amount of sulfur used was not measured, but only enough was used to coat the leaves lightly.

"Two weeks later the mildew had covered the leaves of all plants except on the dusted, which was free from it. When the clover was cut for hay, on May 24, the sulfur still had the mildew under control.

"This field had been well limed and fertilized and a good grade of American seed sown. In this particular case the mildew did not seem to hinder the growth of the clover or reduce the yield of hay. However, the hay from the treated plot was of better quality.

"Should the mildew become a serious pest it could probably be controlled inexpensively by applying five to ten pounds of very fine sulfur per acre. (E. C. Blair)

REPORTS ON DISEASES OF RED CLOVER

Powdery mildew (Erysiphe polygoni)

Massachusetts: First observed July 2 in the edge of a brush lot. One plant was surrounded by and in the midst of a heavy stand of Plantago major. None of the plantain leaves showed infection on July 2 but were highly infected in the autumn of 1926. This mildew was first observed in 1926 on clover plants growing close to piles of weeds which had been removed from an area in the fall of 1925. Plantain was prevalent in the weed flora. In 1924 and 1925, the first infected clover plants were observed near margins of wooded areas. This leads us to believe the infection originates near or at wooded areas, coming from plants growing there, perhaps plantain. (W. H. Davis, July 1)

Anthracnose (Gloeosporium caulivorum)

Massachusetts: Severe in one field at Amherst on June 15. (W. Doran)

Virginia: Causing severe injury to red clover, especially in strains from imported seed at Blacksburg. (Fromme, June 1)

Mosaic (undet.)

Montana: One plot shows 1 to 5 per cent mosaic. (P. A. Young, July 1)

RUST REDUCED ALSIKE CLOVER IN LIVINGSTON COUNTY, ILLINOIS

"Livingston County farmers, being in need of more diversification of crops, and particularly of more legumes, have begun this season the growing of alsike clover. This crop now is

nearly ready to harvest for seed, but a potential seed yield of 3 bushels per acre is being reduced to a probable yield of 1-1/2 bushels per acre because of the attack of rust. It is so severe that practically all leaves are turning red, shrivelling, dying, and falling off. Only the earliest blossom heads are maturing satisfactory seed. Rust is particularly bad in heavy growth in high-lying fields. Fields on low ground, in spite of their ranker growth and apparently better opportunity for infection, being quite remarkably somewhat less diseased."(Tehon, July 8)

DOWNY MILDEW OF SUNFLOWER

Montana: One field of Mammoth Russian Sunflowers (5 acres) on the Experiment Station shows a heavy infestation of downy mildew (Plasmopara halstedii) this year. While one side of the field is nearly free from the disease, from 1 to 26 per cent of the sunflowers in the rest of the field show prominent symptoms of the disease. The rust is now sporulating in great abundance on the seedling plants. The mottling is visible on the cotyledons in many cases. Since the disease is very abundant in the seedlings, which developed before spore production began, I consider this to be strong circumstantial evidence that the fungus is seed-borne. I have a little article in press describing this disease. (P. A. Young, July 1)

STRAWBERRY YELLOWS REPORTED FROM MASSACHUSETTS

A disease which apparently agrees with the description and illustration offered by Plakidas (Phytopath. 16. June 1926) of California has been reported from the vicinity of Concord, Massachusetts, by E. F. Guba. It is generally severe in that section causing an estimated reduction in yield of 10 per cent. No specimens have been received by this office, nor so far as is known has the disease been compared with that in California by those who are familiar with the latter disease. Considerable work will be necessary before the two can be proved either the same or dissimilar. In the meantime efforts should be made to discover the cause, means of spread, and control methods, and pathologists in other states should be on the watch for troubles of this kind.

APPLE SCAB DAMAGING THIS YEAR

Massachusetts: First scab on fruit for the first time this year on June 20. Present indications are that the disease will be more severe this year than for the last several years. (Doran)

New York: (Reports from New York State Col. Agr. Depts. Pl. Path. & Entom. Weekly News Letter.)

Clinton Co.: Apple scab is exceptionally serious for this time of year. As many as 3/4 of the leaves shows lesions in a few indifferently sprayed orchards, and fruit lesions are appearing in generous numbers. The best sprayed orchards, however, are clean. (A. B. Burrell, July 11.)

Chautauqua Co.: Apple scab is still too plentiful and has become well established on many fruits. (K. E. Paine, July 11.)

Onondaga Co.: Scab infection is very heavy on the foliage of the apples in most sections of the county. Three or four of the orchards in the spray service which received a special application during the latter part of blossoming are practically free from scab. These are the criterion orchards. There is very little scab infection on the apples to date. (D. D. Ward, July 11.)

Orange Co.: Secondary scab infections are numerous and in some blocks of McIntosh and other particularly susceptible varieties practically all the fruits are already infected. Other well sprayed blocks of the same varieties are almost entirely free of scab. (W. E. Blauvelt, July 11)

Wayne Co.: Scab lesions on young fruits are very common, particularly in orchards that have not been well sprayed. (M. E. Buckman, July 5.)

Orleans Co.: Scab is now beginning to show up on the fruit and in poorly sprayed orchards a considerable portion of the fruit is already spotted. (R. G. Palmer, July 5.)

Pennsylvania: Although the conditions were favorable at several times during the spring for apple scab infection, and the weather very favorable for spread, it is only on unsprayed orchards that scab has been troublesome. (W. A. McCubbin, July 5.)

Maryland: Perithecia of apple scab were found on every fallen leaf examined this spring by the writer and Mr. Hunter. Leaves of many varieties were examined, including both more and less susceptible varieties such as Stayman, Stayman Winesap, Delicious, Yellow Transparent, and York Imperial. Many leaves were examined in orchards in the vicinity of Salisbury, Snow Hill, Hurlock, Easton, Annapolis, Chestertown, College Park, Westminster, Smithsburg,

and Hancock. Perithecia on fallen leaves were just as abundant in sprayed orchards as they were in unsprayed ones.

On April 6, perithecia on apple leaves were examined in Talbot County. The asci had formed and their contents had not differentiated into ascospores. On June 3, an orchard in this county was inspected. Spraying was begun in this orchard on April 11. On April 13, it rained and spraying could not be resumed until April 14. Stayman Winesap trees sprayed before April 13, had only a trace of scab and the same variety sprayed after April 13, had much more scab but only a moderate amount. However, several trees sprayed after April 13, located in a low place along a ditch were severely infected. None of the trees had reached the pink stage by April 13.

Another interesting observation was made in an orchard located in Dorchester County. This orchard is located on lighter land than the one examined in Talbot County and the trees are usually a few days earlier in their development. It rained there on April 9, and 13. Spraying was begun on April 7. On Stayman Winesap trees sprayed between April 7 and 9, there was only a trace of scab. The same variety sprayed between April 9 and 13, showed a moderate amount of scab. The trees sprayed after April 13 were very severely infected with scab. Some of them were so severely infected that scarcely a leaf without a scab lesion could be found. The entire orchard was sprayed before the pink stage was reached. Concentrated lime-sulfur 1-40 was used in both orchards. (R. A. Jehle, June 13.)

Virginia: A distinct second cycle of scab lesions appeared on or about July 3. These lesions usually are found near some old parent lesion. This infection cycle was noted on Smokehouse fruits.

The possibility of late-season scab infection in this section is a subject of interesting speculation. The spray season came to a close on July 7 and there will, therefore, be no fungicide on the fruits or leaves from that date hence. (Report of the Winchester Laboratory, July 10, 1927.)

Illinois: Apple scab seems to be so severe in many orchards that serious injury is being done to the leaves where spraying is practiced. Continuous rains made it impossible to control the disease early in the season. As a result the diffused type of scab has developed over the entire surfaces of the leaves and when the sprays are applied killing of the leaf tissues results. For this reason sprayed orchards look much worse at present than unsprayed ones. Fruit infection is general in both sprayed and unsprayed orchards. In southern Illinois where scab has been generally absent the past two years there is very little present this season although rains have been as heavy and continuous there as elsewhere.(H. W. Anderson, June 20.)

Michigan: We are experiencing the worst attack of apple scab known in the last ten years. The first infection came when most of the varieties were in the delayed dormant. About 15 per cent of the ascospores were discharged at this time. About two weeks later, May 14, 15, 16, 17, there was a period of continuous light rainfall. This produced a heavy leaf and fruit infection. As a result many unsprayed orchards were 70 per cent defoliated by June 25. In one orchard scab spots are abundant on the young twigs.(C. W. Bennett, July 5.)

APPLE CEDAR RUST (GYMNOSPORANGIUM JUNIPERI-VIRGINIANAE)

Massachusetts: First observed on cedars, May 8, 1927. Aecial stage, first observed June 6, 1927, on a wild crabapple tree growing in the open. Infection serious. (W. H. Davis, July 1.)

New York: (Reports from New York State Col. Agr. Depts. Pl. Path. & Entom. Weekly News Letter.)

Clinton Co.: A severe leaf infection and a light fruit infection of cedar rust were noted in a block of Wealthy trees at Crown Point. (A. B. Burrell, July 11.)

Ulster Co.: Serious on the foliage and fruit of susceptible varieties of apples in the cedar areas. (A. M. Boyce, July 5.)

Pennsylvania: Apple rust has not been damaging in Pennsylvania since a campaign was undertaken about ten years ago to remove red cedars from the neighborhood of the most important orchard sections in the southeastern corner of the state. In 1927 the various hosts of the red cedar rusts show a greater amount of leaf rust than usual on account of the favorable conditions for infection during sporidial discharges. (W. A. McCubbin, July 5.)

Michigan: Considerable infection reported from the middle portions of the extreme southern end of the state. This territory is not a commercial fruit section, however, red cedars are abundant and "cedar apples" were found in great quantity this spring. (C. W. Bennett, July 5.)

BLIGHT OF APPLES SEEMINGLY LESS PREVALENT THIS YEAR.

More reports on Bacillus amylovorus indicate that conditions have not favored blight this year.

New York: Blossom blight of pears and apples is exceptionally rare. Oozing of hold over cankers was not common. Periods favorable to pollinating insects were brief and infrequent. On King apples in one orchard at Ithaca blossom blight is severe. Northern Spy in the same block is moderately blighted while MacIntosh and Fameuse are practically free from blight. (H. E. Thomas.)

Pennsylvania: Fire blight has been somewhat erratic, but in general the amount seems to be somewhat less than usual. (W. A. McCubbin, July 5.)

Michigan: Blossom blight was unusually rare and very little twig blight has developed. (C. W. Bennett, July 5.)

Colorado: Observed in places, causing considerable damage. (E. L. LeClerg, July 1.)

BACTERIAL SPOT OF PEACH (BACTERIUM PRUNI) SERIOUS IN ARKANSAS AND ILLINOIS

Arkansas: Very common and severe this year, especially on trees lacking in vigor. Spraying has apparently failed to control the disease on such trees. Many typical twig cankers, ordinary leaf spotting, and fruit spotting observed. Extreme prevalence of the disease is possibly correlated with the tremendous rainfall for the last 2 1/2 months. Effect of this, however, is not entirely as infection medium, but largely as a harmful agent on roots. Peach roots, as is well known, can't stand much water. (H. R. Rosen, June 15.)

Illinois: Undoubtedly the worst outbreak of this disease ever experienced is occurring in this state. A physiological leaf drop caused partial defoliation of the peaches early in the season and bacterial spot is taking many of the remaining leaves. Very severe fruit infection is also evident at this time. (H. W. Anderson, June 20.)

BLOSSOM INFECTION OF PEACHES WITH SCLEROTINIA

New York (Monroe Co.): Blossom blight on peaches showed up so that counts were made on the 9-acre demonstration. (Report New York State Col. Agr. Depts. Pl. Path. & Entom. Weekly News Letter, R. C. Coombs, June 20.)

Pennsylvania: The blossom infection from brown rot presumably arising from ascospore production was somewhat marked this year. The damage to the bloom and set of fruit was inconsiderable however, since in no case was the percentage of blossoms killed very large. (W. A. McCubbin, July 5.)

Illinois: Brown rot occurred on blossoms and twigs early in the season - a condition which is rare in this state as compared to eastern conditions. Early varieties of peach in southern Illinois are badly rotted. A severe epiphytotic may be expected. Fortunately curculio is not abundant this season and there is some hope of controlling brown rot by continuous spraying or dusting. (H. W. Anderson, June 20.)

TWO MORE STATES REPORT ON PEACH LEAF CURL.

Pennsylvania: Peach leaf curl has been unusually prevalent in the southeastern peach section of Pennsylvania. Many orchards, not protected by spraying, were badly defoliated. It is noticeable that the disease has been very irregular in occurrence, some orchards suffering severely while those nearby showed very little disease. (W. A. McCubbin, July 5.)

Michigan: Leaf curl has been unusually widespread and destructive. It is estimated that 95 per cent of the leaves in some of the unsprayed orchards were affected. These orchards have been nearly completely defoliated. Good control was secured in sprayed orchards in which the spray was applied early. (C. W. Bennett, July 5.)

CHERRY LEAF SPOT BAD THIS YEAR.

These and other reports that have been rdeived indicate that serious damage from this disease is in progress.

New York: (Reports from New York State Col. Agr. Depts. Pl. Path. & Entom. Weekly News Letter.)

Columbia Co.: Defoliating a good number of cherry orchards. (A. B. Buchholz, July 5.)

Niagara Co.: Rapidly causing defoliation of unsprayed orchards. (G. E. R. Hervey, July 11.)

Wayne Co.: Quite severe in many orchards. One young cherry orchard was observed in which nearly one-third of the leaves were infected. In some orchards there are many yellow leaves dropping from other causes, supposedly physiological. (M. E. Buckman, July 11.)

Chautauqua Co.: Leaf spot and other yellowing of leaves is becoming quite prevalent in all unsprayed and improperly or carelessly sprayed orchards and in some orchards sprayed very carefully except that no petal fall application was made. (K. E. Paine, July 11.)

Illinois: Extremely destructive and widely distributed. Complete defoliation of trees has occurred in many sections so that the ripe cherries are entirely exposed. Trees sprayed three or four times with lime-sulfur are quite clean in sharp contrast to these defoliated trees. (H. W. Anderson, June 20.)

Michigan: Leaf spot has been late in starting in the southern part of the state. Reports from the northern part of the lower peninsula indicate that leaf spot has developed rapidly in the last two weeks. (C. W. Bennett, July 5.)

RASPBERRY DISEASES.

Mosaic

New York: (Reports from New York State Col. Agr. Depts. Pl. Path. & Entom. Weekly News Letter.)

Erie Co.: Yellow mosaic on black raspberries was noted in several localities in the Brant section. Mild mosaic appeared in nearly all Columbia plantings. (M. N. Taylor, July 5.)

Chautauqua Co.: Mosaic on both red and black raspberries is now very easily found. (K. E. Paine, July 11.)

Streak

New York: (Erie Co.) A planting of Giant Blacks were nearly 100 per cent affected with Eastern blue stem. One peculiar characteristic of this variety is that the disease does not appear until the second or third year after planting. (Report from New York State Col. Agr. Depts. Pl. Path. & Entom. Weekly News Letter, M. N. Taylor, July 5.)

PEA DISEASE SURVEY IN UTAH

M. B. Linford, who is conducting a plant disease survey in Utah this year, has reported under date of July 2 on the results of his inspections of pea fields in various commercial sections of the state. Dr. Linford's experience with pea diseases in Wisconsin makes his report especially valuable.

Rootrot (Aphanomyces euteiches)

"This disease occurs in widely separated localities in Utah, but appears to be less generally destructive than in Wisconsin. Its

occurrence appears to be less closely associated with repeated cropping with peas than in Wisconsin. Irrigation water appears to function importantly in its distribution, and excessive irrigation provides conditions which favor its development. In some instances, at least, the disease affects only part of a root system, apparently having developed during and immediately following irrigation and having been checked by drying of the soil before the entire root system was affected. In some fields, extensive root infection has led to no appreciable weakening of the plants, but one field which showed 100 per cent infection suffered a loss estimated at 75 per cent of the crop.

"Canners and growers in this state commonly refer to the decay of long vines, lodged and matted on wet soil, as rootrot. This is a trouble encountered especially in the Admiral varieties when grown on rich soil. The vines, becoming lodged and matted on the ground, decay readily when wet by irrigation water or heavy rains, in the absence of any specific parasite."

Seedling injury and stem canker (Rhizoctonia)

"Seedling injury sometimes resulting in the death of as much as 15 per cent of the stand is more troublesome in some localities than the Aphanomyces rootrot. This appears to be due in large measure to a type of Rhizoctonia which has been isolated readily from affected plants, although some other organism may also be involved. In one canning factory district numerous fields showed losses of 5 to 10 per cent of plants. The trouble appears to be most prevalent on loose, black loam soils cropped repeatedly with truck crops."

Footrot (Ascochyta sp. and Fusarium spp.)

"A dark brown footrot, attacking the plant at the base of the first internode and the top of the hypocotyl, with symptoms which agree with those described by F. R. Jones for the rot caused by Fusarium martii var. pisi and by Miss Gilchrist for the rot caused by Ascochyta sp., is of common occurrence but of relatively minor importance in the state. It is frequently found in amounts varying from a trace up to 5 per cent and sometimes causes the death of a few of the affected plants. Isolations from plants affected with this disease have yielded cultures of the Ascochyta and of various species of Fusarium."

Black-leaf, (Fusicladium pisicola)

"This leaf disease is much less prevalent than from 1921 to 1924. To date, only a trace of it has been observed, occurring in Green Admiral peas in a locality where the disease has been found other years. Perhaps more of the disease is to be expected before the crop is harvested in the higher valleys that have been most heavily infested in the past."

Downy mildew (Peronospora viciae)

"Traces of this disease occur this year, as usual, in the form of scattered downy patches on the lower side of leaves. This has been observed in numerous fields but it has not been seen to cause important injury. The "systemic" type of development, leading to the complete overrunning of affected shoots by the mildew and to death of the plant or the production of new shoots from the basal nodes, has been observed here, as elsewhere, affecting from a trace up to one or two per cent of plants. The most severe development of this sort which the writer has yet observed was found in a field of Horsford's Market Garden peas in the ten-node stage. Five per cent of plants were completely crippled or killed by the disease and an additional four per cent showed a crippled primary shoot with the production of one or more lateral shoots which were as yet relatively clean. Other plants were heavily spotted. A conservative estimate places the loss in this field at eight per cent of the crop."

Bacterial blight (Bacterium pisi)

"Traces of this disease are found commonly in Alaska variety peas and less frequently in late varieties. It is usually limited in its extent to the lower internodes of the stem and the lower leaves, developing sometimes as a stem blight and sometimes as a leaf spot. The only severe development of the disease observed this year was in a home garden where home-grown seed, which had not been entirely separated from the chaff, had been planted somewhat earlier than the usual planting date of canning crop peas. Here, early spring rains had led to severe infection of the lower leaves, but the plants outgrew the injury and yielded well."

Root-knot (Heterodera radicicola)

"The nematode root-knot was found in only one field of peas growing on a sandy soil in a tomato producing locality. Here it occurred only locally and was injuring the plants much less severely than in the field reported by R. E. Vaughan from Wisconsin last year."

HOT WATER SEED TREATMENT REDUCES POWDERY MILDEW OF PEA IN NEW MEXICO.

"Erysiphe polygoni appeared earlier than last year on early crop. Twenty tons of peas for fall crop were treated with hot water at Las Vegas, New Mexico. Experiments conducted last year show disease can be reduced to minimum by treating seed with hot water at 54°C. for 20 minutes. (R. F. Crawford, July 1.)

SURVEY FOR TOMATO BACTERIAL CANKER IN GEORGIA

Since the report of the finding of tomato bacterial canker (Aplanobacter michiganense) in Georgia, published in the Plant Disease Reporter, June 1, page 20, a survey was made June 8 and 9 by Miss Mary K. Bryan of the Laboratory of Plant Pathology and O. C. Boyd of extensive plantings in Coffee County where the affected field described was located, and of the tomato growing section around Brunswick. No canker was found in the Brunswick section. In Coffee County the disease was limited to the 500-acre planting in which it was first found. This is divided into two farms, one of 200 acres, the other of 300 acres. At the time of this survey no canker was found on the smaller farm, but the larger one was affected throughout its ten fields, infection varying in the fields from 5 to 50 per cent, with many spots showing 50 to 75 per cent, some plants being entirely dead and others only recently attacked.

On June 22 Boyd made another visit to this planting. Infection in the 300-acre farm had increased to about 50 per cent, with about 8 per cent of the hills dead. In addition, the 200-acre farm had become affected, to the extent of about 11 per cent, with 1 per cent dead hills. As much as 60 per cent was observed in one area in the drier part of one of the fields.

According to Boyd, canker was most noticeable on both farms in fields where tomatoes had been grown in 1926. It had evidently been introduced in 1926, the first year that the company owning the farms had operated in that locality, and had been present in the 1926 crop of both farms. Boyd mentions three possible means of introduction of the organism - with the seed, which had been obtained from a seed-growing concern in California; with compost shipped from Waycross and Atlanta; or with the

"salt grass" used for covering the beds on cold nights, which came from New Jersey.

During a survey of the small tomato fields of Thomas and Brooks Counties on June 22, Boyd found bacterial canker in a one-half acre field near Pavo, Brooks County. Infection was about 40 per cent. The plants were from New Jersey seed.

A STEM AND TUBER ROT OF POTATO IN GEORGIA

"Irish Cobblers dug during May, during the very dry period, showed a few tubers with spots not unlike late blight infection in its early stage of tuber infection. A week later the stored tubers contained several with the infection much farther advanced, resembling in all appearances late blight tuber infection, except that the spots were darker in color and less moist. Most of the infection points were at the lenticels. A few tubers were affected at the stem end, indicating that the disease had progressed thru the stolon into the tuber. On June 13, the remainder of the potatoes were dug, about three days after rains started. About 50 per cent of all tubers dug, including Green Mountain and Spaulding Rose, were affected with that type of rot, about half of the affected ones having developed soft rot in very much the same manner as in the case with late blight rot the other half, being badly spotted but still firm.

"About 50 per cent of all of the plants showed a recently developed stem and root rot. The lesion in some cases extended upward on the top to include the base of two or three branches. The older specimens of that type possessed an abundance of pycnidia with spores of the Macrophoma type. The root and stem lesions resembled in all respects the Macrophoma root and stem rot of beans, especially in the later stages of the disease. The pith of the stem was invaded and filled with the black sclerotial-like bodies so common in the bean disease. The cortex when dry sloughed away leaving a dry, ashen-gray wood. A fungus was isolated in pure cultures from stem, root and tubers. It resembles in pure culture the Macrophoma common here on snap beans, developing profusely the sclerotial-like bodies but no pycnidia. The Macrophoma disease of beans was unusually prevalent in South Georgia this year." (O. C. Boyd, June 15,)

GEORGIA WATERMELON DISEASES.

Wilt (Fusarium niveum)

"A survey through the melon sections of south Georgia during the past week found wilt (Fusarium niveum) unusually

prevalent. The vines wilted down sooner than ordinarily due to the protracted dry weather. There will likely occur about twice as much loss this year as in 1926 from wilt." (O. C. Boyd, June 25.)

Anthracnose (Colletotrichum lagenarium)

"On June 20-25, Anthracnose (Colletotrichum lagenarium) was just gaining a start in the fields of the principal melon growing sections. No pox has been seen. The disease is late due to the dry season, and caused little damage to the main crop."(O. C. Boyd, June 25.)

COTTON DISEASE REPORTS FROM NEW MEXICO

Damping Off (Corticium vagum)

"Cool nights have aggravated this disease. Stand reduced especially on heavy soil. Warm weather overcoming the disease." (R. F. Crawford, July 1.)

Angular leaf spot (Bacterium malvacearum)

"Young plants from undelinted seed attacked. Foliage almost destroyed in some cases. A large percentage of seed planted was delinted. " (R. F. Crawford, July 1.)

SYCAMORE ANTHRACNOSE (GNOMONIA VENETA)

Pennsylvania: More prevalent than usual and at date of writing, July 6, many trees have just begun to put out their new foliage. It is worthy of note that in two or three localities the sycamore blight has been severe while adjacent white oaks were not affected. (W. A. McCubbin, July 5.)

Ohio: The anthracnose of the sycamore is prevalent all through the southern portion of Ohio. This disease has been bad for about three seasons. (E. W. Mendenhall, July 8.)

OAK ANTHRACNOSE

Pennsylvania: The anthracnose of oak (Gnomonia veneta) has been particularly abundant on white oaks this season. In some cases practically all the first-formed foliage has been destroyed. (W. A. McCubbin, July 5.)

Illinois: Many complaints have been received from northern Illinois concerning a leaf blight of oak. As described by those who have observed it, it seems to start near the ground and work upward. It is more prevalent on the white oaks than on others. Gnomonia veneta seems to be the cause of the trouble. This fungus usually causes a leaf spot rather than a blight in this region but the unusually wet weather has evidently produced conditions similar to anthracnose of sycamore, and entire clusters of leaves are killed. The fungus is also attacking the young twigs. (H. W. Anderson, June 20.)

XI